CLAIMS

1. A computerized data file system, comprising:

   a first process that maintains a data file in computer-readable memory; and

   a second process that generates a first message requesting that said second process be granted by said first process a plurality of tokens required for said second process to modify at least one characteristic of said file;

   said first process generating a second message, in response to said first message, that grants said tokens to said first process if said tokens are available for grant to said second process.

2. A system according to claim 1, wherein:

   said first process is resident at a server computer node, and said second process is resident at a client computer node.

3. A system according to claim 1, wherein:

   if any of said tokens are unavailable for grant to said second process as a result of current grant of said tokens to at least one other process, said first process generates a third message revoking the current grant of said tokens to said at least one other process.

4. A system according to claim 3, wherein:

   said at least one other process, in response to said third message, generates a fourth message making said tokens available for grant by said first process.

5. A system according to claim 3, wherein:

   said first process resides in a first computer node;

   said second process resides in a second computer node;

   said at least one other process resides in at least one other computer node; and

   said first computer, second computer, and at least one other computer nodes are networked together and are remote from each other.

1   6.   A computer node, comprising:

2   a first process residing in said node that generates a first message that grants a set

3   of tokens, if the set of tokens is available for grant, to a second process that requested

4   grant of the set of tokens, the set of tokens being required for the second process to be

5   able to modify at least one characteristic of a file stored in computer-readable memory.

1   7.   A node according to claim 6, wherein:

2   each of the processes resides in a respective one of the computer nodes.

1   8.   A node according to claim 7, wherein:

2   one of the processes resides in a server computer node and the other of the proc-

3   esses resides in a client computer node.

1   9.   A node according to claim 6, wherein:

2   if at least one token in the set of tokens is unavailable for grant because the at

3   least one token is currently granted to a third process, the first process also generates a

4   second message that revokes current grant of the at least one token to the third process

5   prior to generating the first message.

1   10.   A node according to claim 6, wherein:

2   the first message is generated by the first process in response to a request for the

3   grant of the set of tokens generated by the second process, the request specifying all to-

4   kens required for the second process to be able to modify the at least one characteristic of

5   the file.

1   11.   A computer node, comprising:

2   a first process residing in said node that generates a request to a second process

3   for grant of a set of tokens required to enable the first process to modify at least one char-

4   acteristic of a file residing in computer-readable memory.

1   12.   A node according to claim 11, wherein:

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2   the second process resides in a second computer node, and the memory is com-

3   prised in said second node.

1   13.   A node according to claim 11, wherein:

2   the set of tokens comprises all tokens required for the first process to be able to

3   modify the at least one characteristic of the file.

1   13.   A network computer system, comprising:

2   a first computer node having a data file in computer-readable memory; and

3   a second computer node that issues to the first computer node a first message re-

4   questing grant of a set of tokens required to carry out a modification of at least one char-

5   acteristic of said file;

6   the first computer node issuing a second message to the second computer node

7   after receipt of the first message, the second message granting the set of tokens to the first

8   process if the set of tokens is available for grant to the second process.

1   14.   A system according to claim 13, wherein:

2   the first computer node is a server node, and the second computer node is a non-

3   server node.

1   15.   A system according to claim 13, wherein:

2   the set of tokens comprises all tokens required to carry out the modification of the

3   at least one characteristic of the file.

1   16.   A system according to claim 13, wherein:

2   if at least one token in the set of tokens is unavailable for the grant because the at

3   least one token is currently granted, the first computer node waits to issue the first mes-

4   sage until after the first computer node receives a third message from a third computer

5   node indicating relinquishment of current grant of the at least one token.

1   17.   A system according to claim 16, wherein:

2   said further instructions, in response to said third message, generate a fourth mes-

3   sage making said tokens available for grant.

1   24
     23.   Computer-readable memory according to claim 19, further comprising:

2   further instructions which when executed cause, if at least one token in the set of

3   tokens is unavailable for grant because the at least one token is currently granted, genera-

4   tion of a second message that revokes previous grant of the at least one token prior to

5   generating the first message.

1   25
     24.   Computer-readable memory according to claim 19, wherein:

2   the first message is generated in response to a request for the grant of the set of

3   tokens generated, the request specifying all tokens required to be able to modify the at

4   least one characteristic of the file.

1   26
     25.   Computer-readable memory according to claim 20, wherein:

2   the set of tokens comprises all tokens required to be able to modify the at least

3   one characteristic of the file.

1   27
     26.   A computerized data file system, comprising:

2   means for maintaining a data file in computer-readable memory; and

3   means for generating a first message requesting grant of a plurality of tokens re-

4   quired to modify at least on characteristic of said file;

5   means for generating a second message, in response to said first message, that

6   grants said tokens if said tokens are available for grant.

1   28
     27.   A system according to claim 26, further comprising:

2   means for generating, if any of said tokens are unavailable for grant as a result of

3   current grant of said tokens, a third message revoking the current grant of said tokens.

1   29
     28.   A system according to claim 27, further comprising:

2   means for generating, in response to said third message, a fourth message making

3   said tokens available for grant.

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1   29.   A computerized method for coherently maintaining and modifying a data file,

2   comprising:

3   maintaining a data file in computer-readable memory;

4   generating a first message requesting grant of a plurality of tokens required to

5   modify at least one characteristic of said file; and

6   generating a second message, in response to said first message, that grants said

7   tokens if said tokens are available for grant.

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1   30.   A method according to claim 29, further comprising:

2   if any of said tokens are unavailable for grant as a result of current grant of said

3   tokens to at least one other process, generating a third message revoking the grant of said

4   tokens.

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1   31.   A method according to claim 30, wherein:

2   in response to said third message, a fourth message making said tokens available

3   for grant is generated.

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1   32.   A computerized method for use in maintaining coherency of a data file, compris-

2   ing:

3   generating a first message that grants a set of tokens, if the set of tokens is avail-

4   able for grant, to a requester of the grant of the set of tokens, the set of tokens being re-

5   quired for requester to be able to modify at least one characteristic of the file.

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1   33.   A method according to claim 32, wherein:

2   if at least one token in the set of tokens is unavailable for grant because the at

3   least one token has been currently granted, the method also comprises a second message

4   that revokes current grant of the at least one token prior to generating the first message.

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1   34.   A method according to claim 32, wherein:

2   the first message is generated in response to a request for the grant of the set of

3   tokens generated by the requester, the request specifying all tokens required for the re-

4   quester to be able to modify the at least one characteristic of the file.

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1   35.   A computerized method for use in maintaining coherency of a data file, compris-

2   ing:

3   generating a request for grant of a set of tokens required to enable modification of

4   at least one characteristic of the file.

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1   36.   A method according to claim 35, wherein:

2   the set of tokens comprises all tokens required to be able to modify the at least

3   one characteristic of the file.